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NOTES ON GEOGRAPHIC DISTRIBUTION

Fish, Gymnotiformes, Apteronotidae, Rio Paranaíba drainage, Central Brazil, *Porotergus ellisi*: Distribution extension

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Porotergus ellisi Arámburu, 1957, was described from the delta of Rio Paraná, the type locality being San Pedro, province of Buenos Aires, Argentina. Later, Albert (2001) and Triques (2005) mentioned the occurrence of the species in Rio Paraná basin at Ilha Solteira (border of Mato Grosso do Sul and São Paulo states) and also in Rio Paraguay basin, from the drainage of Rio Taquari at the locality of Coxim (state of Mato Grosso do Sul), based on the material from the *Museu de Zoologia da Universidade de São Paulo* (MZUSP 24462, 45080, respectively). Recently, the first and last authors captured a large amount of specimens of *P. ellisi* (about 720 specimens) in a coffer dam rescue program for the *Serra do Facão* Power Plant, in Rio São Marcos, municipality of Catalão, drainage of Rio Paranaíba, tributary of the right bank of Rio Paraná, being part of upper Rio Paraná basin (18°04'42" S, 47°41'26" W; 675 m; Figure 1).

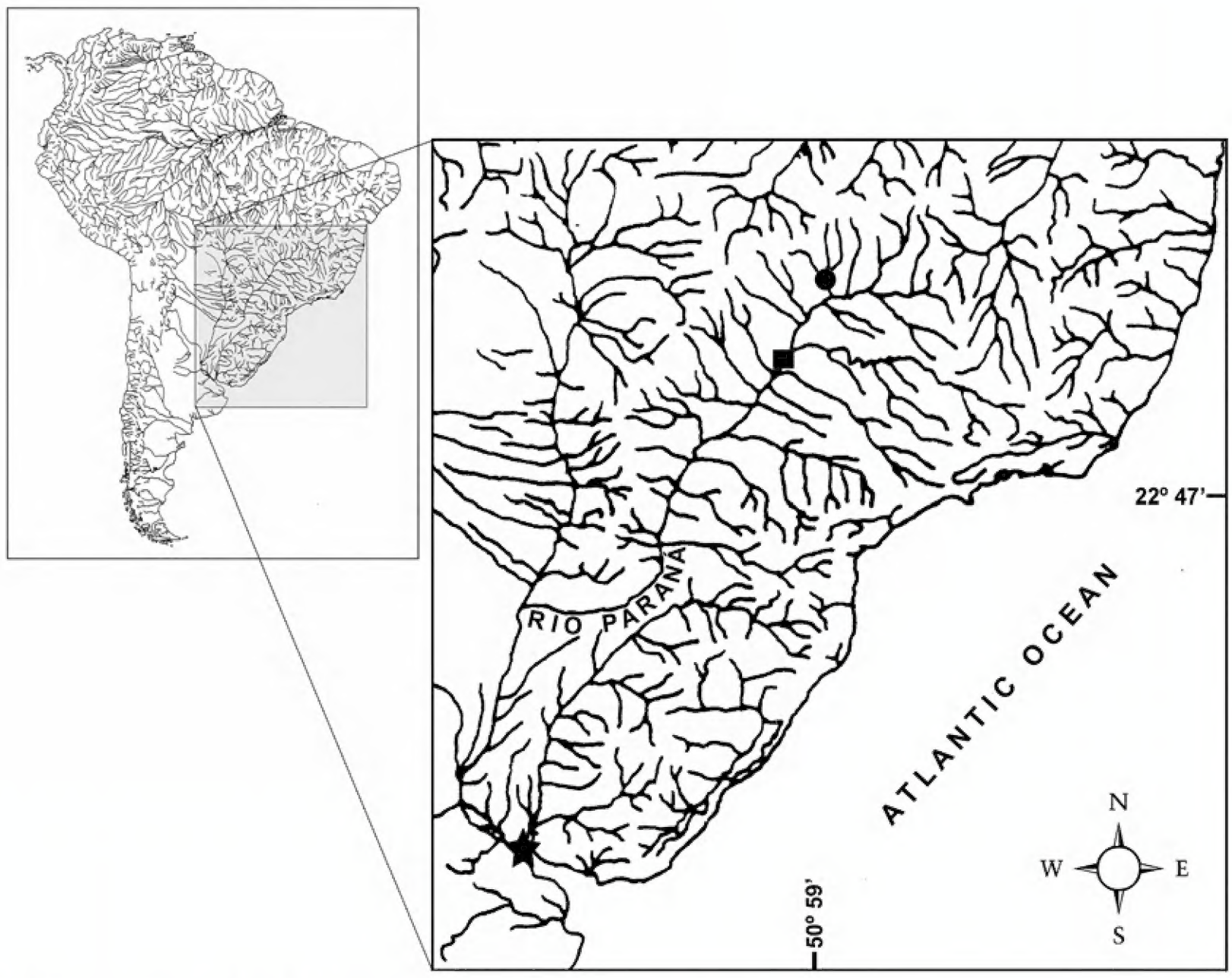

Figure 1. Map of distribution of *Porotergus ellisi*. Star indicates the type locality. Square indicates the reservoir of Ilha Solteira, the currently known northern limit of distribution in upper Rio Paraná basin. Circle indicates the new site of occurrence (18°04'42" S, 47°41'26" W; 675 m a.s.l.), in Rio São Marcos, state of Goiás.

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This register extends the species distribution upstream to about 730 km. The fishes were collected after the partial extraction of water, in the remaining pools (Figures 2 and 3), using nylon seine hauls 20 m long x 1.6 m deep, 4.0 mm stretch mesh. A total of 720 specimens of *P. ellisi* were collected, 50 of which were fixed in formalin, and the others released alive in Rio São Marcos.

Porotergus ellisi revealed to be the second most abundant species in the pools, after *Pimelodus maculatus* Lacepède, 1803 (Siluriformes).

Figure 2. Seine haul fish collect in a remaining pool of coffer dam in Rio São Marcos.

Figure 3. A remaining pool of coffer dam in Rio São Marcos, where specimens of *Porotergus ellisi* were collected.

Porotergus ellisi (Figure 4) is morphologically similar to *Apteronotus brasiliensis*, both presenting brown body without mid-dorsal clear stripe and moderately elongated snout. This suggests the possibility that other specimens of *P. ellisi* had already been collected in other sites of upper Rio Paraná basin and misidentified as *A. brasiliensis*.

Figure 4. Lateral view of *Porotergus ellisi*, 148 mm of length to the end of anal fin.

Specimens of *P. ellisi* present in taxonomic collections were collected specially in two coffer dams in large amounts of specimens and those collected otherwise are much rarer. Therefore, it is possible that the species inhabits deep waters of the rivers. The same site in Rio São Marcos and most tributaries were intensively sampled previously to the coffer dam construction using hand nets and gill nets (including the use of mesh sizes suitable for capturing this species). With these methods, *P. ellisi* was not found, reinforcing the idea of a deep water species. Therefore, it is possible that species inventories in upper Rio Paraná basin have not revealed *P. ellisi* because the sampling methods used are not suitable for deep water species. Considering the large amounts of specimens collected in coffer dam and its absence from shallower waters, we suggest that the species inhabit deep waters, and that its range is even wider than the currently known.

Although Albert (2001; 2003) positioned the species in *Apteronotus*, Triques (2005) maintained it in *Porotergus*. The specimens of *P. ellisi* were identified comparing them with the species diagnosis presented in Triques (2005) and also comparing them with specimens from Ilha Solteira (MZUSP 24462). As skeletal characters

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were included in the diagnosis of Triques (2005), some specimens from Rio São Marcos were cleared and stained as in Taylor and Van Dyke (1985) and dissected as in Weitzman (1974). All the diagnostic features presented in Triques (2005) were found in the specimens of Rio São Marcos, corroborating the identification.

Some species of Apteronotidae were described from Rio Paraná basin: *P. ellisi*, *Sternarchella curvioperculata* Godoy, 1968, *Sternarchorhynchus britiskii* Campos-da-Paz, 2000 and *Tembeassu marauna* Triques, 1998. *Apteronotus brasiliensis* (Reinhardt, 1852) was described from Rio São Francisco basin and is long known to occur in Rio Paraná basin (e.g. Travassos 1960; Albert 2001; Triques 2005). Specimens of *A. brasiliensis*, *S. britskii* and *T. marauna* were collected together with *P. ellisi* in the coffer dam of Ilha Solteira. However, only specimens of *P. ellisi* (Figure 4) and of *A. brasiliensis* were obtained in Rio São Marcos coffer dam, despite the large number of collected apteronotid specimens. The reasons why *S. curvioperculata*, *S. britskii* and *T. marauna* were not registered in Rio São Marcos and its main tributaries are not known.

From the apteronotid species occurring in upper Rio Paraná basin, there can be difficulties to diagnose *P. ellisi* only from *A. brasiliensis*. However, a differentiation of *P. ellisi* and *A. brasiliensis* can be done on the basis of external morphology: (1) gape beyond vertical through posterior eye margin in *P. ellisi* (vs. reaching a vertical a little behind posterior nostril in *A. brasiliensis*); (2) absence of concavity in dorsal profile of snout in *P. ellisi* (vs. presence of concavity above posterior nostril in dorsal profile of snout in *A. brasiliensis*); (3) snout blunt, its anterior profile roundish to vertical through posterior nostril in *P. ellisi* (vs. anterior snout profile tapering anteriorly in *A. brasiliensis*) and (4) naked skin mid-dorsally on body (vs. scales visible mid-dorsally on body in *A. brasiliensis*).

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